THE FARM INDEX

ECONOMIC RESEARCH SERVICE • U. S. DEPARTMENT OF AGRICULTURE • FEBRUARY 1964

elements in efficiency

ECONOMIC TRENDS

Item	Unit or base period	'57-'59 Average	1962		1963		
			Year	December	October	November	December
Prices:							
Prices received by farmers	1910-14=100	242	243	243	241	241	237
Crops	1910-14=100	223	230	224	234	241	241
Livestock and products	1910-14=100	258	255	259	247	242	234
Prices paid. interest, taxes and wage rates	1910-14=100	292	306	309	311	311	310
Family living items	1910-14=100	286	294	296	297	298	297
Production items	1910-14=100	262	270	273	272	271	271
Parity ratio		83	79	79	77	77	76
Wholesale prices, all commodities	1957-59=100	—	100.6	100.4	100.5	100.7	100.3
Commodities other than farm and food	1957-59=100	—	100.8	100.7	100.9	100.9	101.2
Farm products	1957-59=100	—	97.7	97.3	95.1	96.2	93.3
Food, processed	1957-59=100	—	101.2	100.9	102.2	102.5	100.4
Consumer price index, all items	1957-59=100	—	105.4	105.8	107.2	107.4	—
Food	1957-59=100	—	103.6	103.5	104.9	105.1	—
Farm Food Market Basket:[1]							
Retail cost	Dollars	1,037	1,067	1,062	1,075	1,074	—
Farm value	Dollars	410	410	406	392	395	—
Farm-retail spread	Dollars	627	657	656	683	679	—
Farmers' share of retail cost	Per cent	40	38	38	37	37	—
Farm Income:							
Volume of farm marketings	1947-49=100	123	136	162	206	188	158
Cash receipts from farm marketings	Million dollars	32,247	35,921	3,614	4,517	4,100	3,410
Crops	Million dollars	13,766	15,935	2,006	2,545	2.390	1,910
Livestock and products	Million dollars	18,481	19,986	1,608	1,972	1,710	1,500
Realized gross income[2]	Billion dollars	—	40.8	—	—	—	41.4
Farm production expenses[2]	Billion dollars	—	28.2	—	—	—	29.1
Realized net income[2]	Billion dollars	—	12.6	—	—	—	12.3
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	5,031	351	553	574	—
Agricultural imports	Million dollars	3,977	3,876	462	383	317	—
Land Values:							
Average value per acre	1957-59=100	—	—	121[3]	—	128	—
Total value of farm real estate	Billion dollars	—	—	141.6[3]	—	148.6	—
Gross National Product[2]	Billion dollars	456.7	554.9	565.2	—	—	600.0
Consumption[2]	Billion dollars	297.3	355.4	362.9	—	—	380.0
Investment[2]	Billion dollars	65.1	78.8	78.8	—	—	87.0
Government expenditures[2]	Billion dollars	92.4	117.0	120.2	—	—	128.0
Net exports[2]	Billion dollars	1.8	3.8	3.3	—	—	5.0
Income and Spending:[4]							
Personal income, annual rate	Billion dollars	—	442.1	452.1	471.2	472.6	475.2
Total retail sales	Million dollars	—	19,613	20,253	20,751	20,662	21,548
Retail sales of food group	Million dollars	—	5,784	4,908	4,943	4,984	—
Employment and Wages:[4]							
Total civilian employment	Millions	—	67.8	68.1	69.1	69.0	69.2
Agricultural	Millions	—	5.2	4.8	4.9	4.9	4.9
Rate of unemployment	Per cent	—	5.6	5.5	5.5	5.9	5.5
Workweek in manufacturing	Hours	—	40.4	40.2	40.6	40.5	40.5
Hourly earnings in manufacturing, unadjusted	Dollars	—	2.39	2.42	2.47	2.49	2.50
Industrial Production[4]	1957-59=100	—	118	119	127	127	127
Manufacturers' Sales Inventories:[5]							
Total sales, monthly rate	Million dollars	—	33,308	32,945	35,214	35,162	—
Total inventories	Million dollars	—	57,753	57,753	59,322	59,727	—
Total new orders, monthly rate	Million dollars	—	33,167	33,355	35,354	35,144	—

[1] Average annual quantities of farm food products based on purchases per wage-earner or clerical-worker family in 1952—estimated monthly. [2] Annual rates seasonally adjusted fourth quarter. [3] As of November 1. [4] Seasonally adjusted. [5] Revised series.

Sources: U.S. Department of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Department of Commerce (Industry Survey, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Department of Labor (The Labor Force and Wholesale Price Index.

THE AGRICULTURAL OUTLOOK

Prices farmers receive for most commodities this year are expected to continue little changed from 1963, although under current legislation 1964 wheat crop prices will be lower. Prices received last year were a shade below 1962; a 4 per cent decrease for livestock and products more than offset a rise for crops.

Agricultural production increased 4 per cent in 1963 from a year earlier; production and marketings are expected to continue at high levels in 1964. Farm programs will likely limit feed grain production again but a moderately larger winter wheat acreage has been planted and further increases are expected for soybeans and sugarbeets. Red meat production will likely continue large.

Gross farm income this year will depend to some extent on wheat, cotton and dairy product legislation. Prospective prices and marketings under current programs point to a little change in gross income from 1963. With a continued rise in production expenses, net farm income may be reduced further.

General business conditions indicate a continuation of the expansion that began in the first quarter of 1961. Personal income in the fourth quarter last year rose to a record high, 5 per cent above a year earlier; consumer prices role only a little over 1 per cent.

Consumer expenditures for food and other items increased during the fourth quarter. Auto sales continued strong. Retail sales averaged record high and substantially above 1962.

Output of final goods and services during October-December increased nearly in proportion to the gain in personal income. Industrial production rose to 127 per cent of the 1957-59 average, nearly 7 per cent above a year earlier. The value of new construction was at a record level, although it gained only slightly during the quarter.

Fourth quarter employment was around 1 million persons more than in October-December 1962. The labor force also rose, increasing the rate of unemployment slightly.

COMMODITY HIGHLIGHTS

Broiler prices declined sharply between late November and the week before Christmas to the lowest level on record for this period. In southeastern producing areas, price quotations fell from mostly 13.5 cents per pound to 11 cents and in North Carolina reached a low of 10.5 cents. Prices after Christmas rebounded to 12.5 cents and then moved back to 13.5 cents the second week in January.

Broiler supplies were about the same as a year earlier during the price fluctuations. Two other factors apparently explained much of the price weakness. One was the unexpectedly large accumulation of turkeys by processors and retailers during the holiday season. The other was the continued plentiful supply of red meat. Both conditions led grocery stores to reduce broiler promotions.

The price decline was accompanied by a large buildup and subsequent reduction in the supply of live broilers on farms. Federally inspected broiler slaughter went from about one-fifth below a year earlier in the two weeks ending December 4 to about one-fifth above in the two weeks ending December 18. By January 2, slaughter was 5 per cent above the year-earlier level.

The June-November **pig** crop was down 4 per cent from a year earlier. The main impact of this

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reduction will occur during the second quarter of 1964 and result in higher prices and a lower level of marketing than in the second quarter of 1963.

Slaughter of **sheep and lambs** in April-June likely will average below 1963 levels. Both the beginning inventory and the number of sheep and lambs on feed January 1 were down; slaughter of lambs from the stock sheep inventory probably will not equal the level of a year earlier.

Cattle slaughter in the second quarter may fall below the record high in these months last year. Slaughter weights of steers and heifers are also expected to average less than in 1963. So, a decrease in numbers slaughtered will be reflected by a drop in beef production.

Preliminary estimates of **milk** production in 1963 were set at about 124.7 billion pounds, down 1 per cent from 1962, although output per cow was a record high. Dairy milk production may average about the same as a year earlier during the first quarter of 1964. Butter output dropped 9 per cent last year. Some further decline in butter production is likely this year, but less than in 1963. Fluid milk sales and cheese output may gain.

Prices farmers receive for all wholesale milk during the first quarter likely will run about 5 cents above the $4.15 per 100 pounds received in January-March 1963. Reason: Increasing use of milk in fluid form.

Stocks of manufactured dairy products at the beginning of 1964 were about 2 billion pounds (milk equivalent) below a year earlier. Reasons: Smaller volume of CCC purchases, continued heavy use of CCC products in domestic school and welfare programs and sharply increased foreign disposition of CCC butter.

The **feed grain** supply for 1963-64 was estimated in December at 219 million tons, 4 million above 1962-63. Production of the four feed grains last year was estimated at close to 156 million tons, 9 per cent above 1962. Utilization in 1963-64 is expected to about equal 1963 production; the carryover into 1964-65 may not differ greatly from the 63.1 million tons of a year earlier.

Production of edible **fats, oils and oilseeds** during the 1963-64 marketing year is set at 14.6 billion pounds (oil basis), about 3 per cent above 1962-63. The increase is due to last year's record soybean crop and the largest output of cotton seed since 1953. With record beginning stocks of edible vegetable oils, total food fat supplies are estimated at around 16.9 billion pounds, or about 3 per cent above 1962-63.

Record domestic consumption of food fats and oils is expected in 1963-64. Although per capita use likely will stay about 46 pounds, population growth means larger quantities will be used.

Exports of all food fats and oils (including oil equivalent of soybeans) in 1963-64 may be above last season by around 10 percent.

Grower and retail prices for fresh and processed **fruits** are expected to continue generally above the early months of 1963. Supplies of fresh oranges and grapefruit will remain lighter than usual this winter. Year-end cold storage stocks of fresh apples were larger and those of pears and grapes smaller than a year ago. Smaller stocks also were indicated for most canned and frozen fruits and fruit juices.

Supples of canned **vegetables** are moderately below the record volume of year earlier but above the 1957-61 average. Frozen vegetable supplies are about the same as a year ago. Fewer sweetpotatoes are available for marketing through the spring than last season and prices are likely to continue higher. Potato supplies are heavy—holdings are slightly larger than a year ago.

Last year's **cotton** crop was estimated on December 1 at 15,489,000 running bales. It compares with 14,864,000 bales in 1962 and is the largest since 1953 when there were no acreage allotments. The 1963 production was larger than the previous year in all major producing states except Texas, Missouri, California and Arizona. The indicated yield of 524 pounds per harvested acre was record high compared with the previous record of 466 pounds in 1958. Per acre yields were up in all states except Arizona and California.

Supplies of flue-cured and burley **tobaccos** in 1963-64 exceed a year earlier by 4 per cent and 7 per cent. Although the 1963 flue-cured crop was down some from the previous year, the mid-1963 carryover was substantially above. Burley carryover last October was up 8 per cent and the largest on record. Carryovers of both types likely will increase further.

elements in efficiency

There's all the difference in the world between aggregate and individual figures. A case in point is the use of inputs in agriculture.

In 1962, U.S. agriculture as a whole used only 4 per cent more inputs than were used two decades earlier. However, the decrease in the number of farms was such — from 6.3 million in 1940 to 3.7 million in 1962—that the individual farm used an average of 80 per cent more inputs.

Both increases in inputs, total and by farm, conceal some startling changes in the use of individual production items.

Overall, agriculture used 55 per cent less labor in 1962 than in 1940 while the quantity of fertilizer and lime increased fourfold and machinery inputs and purchases of feed, seed and livestock more than doubled. The total use of farm real estate (land and buildings) remained about the same over the period.

Per farm, the story was something else again. The real estate input climbed nearly 90 per cent from 1940 to 1962. Land of operators who went out of business was largely incorporated in the remaining farms. Even with the increase in size of farms, the number of man-hours of farmwork declined 24 per cent during 1940-62.

Bigger farms have made purchased inputs more important than ever before. In the last two decades, use of mechanical power and machinery per farm increased 300 per cent, while use of fertilizer and lime recorded a fantastic gain at twice that rate. Feed, seed and livestock purchases were expanded 360 per cent.

The value of production assets per farm went up a whopping 700 per cent in a little over 20 years. Where assets per farm averaged $6,300 in 1940, they came to more than $51,000 in 1962. Higher prices for farmland accounted for much of the rise.

Behind these changes in agricultural inputs lie advances in technology, improved management, rising costs of labor relative to machinery and other inputs, a squeeze in unit profits, plentiful credit and a willingness to use it.

The changes in inputs have accompanied the trend to specialization in agricultural production. Generally the trend has meant fewer enterprises on a farm and fewer stages of production for a given enterprise.

Giving up a stage in the production of a particular farm product reduces the assets and capital needed on the farm but does not necessarily cut the input expenditure. For instance, custom machine work may substantially reduce the farmer's machinery investment but increases the need for operating capital.

As spectacular as the changes in the business of farming have been, the forecast is for the existing trends to continue—more machines in place of men, fewer farms and higher production (in total and per farm). As a result, total inputs per farm are projected to increase an additional 34 per cent by 1968. *(1)*

Total use of farm inputs has changed little as the years have gone by. But, the use of inputs per farm and the kinds of inputs have shifted as farming has become more efficient.

The Romance of the Cattle Industry Exists Only on TV and Movie Screens

Judging from TV westerns, cattle ranching is a romantic kind of occupation with huge herds, a few laconic cowhands and a range as far as the camera can see. However, contrary to the script, modern-day cattle spreads are strictly business operations that require a lot of capital and hard-headed management to make them profitable.

ERS specialists recently surveyed cattle ranches in the Northern Great Plains. In order to make comparisons, they grouped the ranches into three sizes. The large operators averaged 360 head of cattle, medium-sized ranches had around 196 head and the small spreads, about 90 head.

A good deal of land is needed to support a cow and calf in the Northern Great Plains. The average for the ranches in the study was about 31 acres for each animal unit. Generally, as the size of the ranch increased, the number of acres needed for a cow and calf went up.

The investment in these ranches is an eye-opener. The large operators reported an average of $151,920; some $80,400 was in land, $63,260 in livestock, and $8,260 in machinery and equipment. The medium-sized spreads had a total investment of $88,140 and the small ranches averaged $44,980. The investment per animal unit averaged $495, $524 and $568 for the large, medium and small operations.

Aside from the land they owned, many of the ranchers in the Northern Great Plains leased additional pasture. On the average, the ranchers in the top group leased about 35 per cent of their acres. In the medium-size group, they leased about 30 per cent while the smallest operators leased 20 per cent. Most all of the ranchers in this area grazed public domain.

When the survey was made in 1960, the large ranchers in the Great Plains reported 1959 gross cash incomes of $27,547. Returns from cash sales of livestock ran $14,979 on the medium-size operations and $6,995 for the small spreads.

Cash operating expenses on the large ranches totaled $11,443 on the average. For medium-size ranches, expenses were $6,151 compared to $3,149 for small operations.

Feed, taxes, and hired labor accounted for an average of 40 per cent of total cash costs. Feed expenses ordinarily include protein concentrates, feed grains, salt and minerals. In years of normal weather, no hay is purchased. The small and medium ranches use only seasonal hired labor while the large spreads usually have at least one extra man all year.

When the expenses were paid, large, medium and small-scale ranchers had net cash returns in 1959 of $7,165, $3,472, and $951 respectively.

Using the information from this study, the researchers concluded that a ranch with 280 head —including 200 breeding cows— would be large enough to return $5,000 in net cash income to the operator. An operation of this size would also allow the rancher a return of 5 per cent on his investment dollars. *(2)*

DATA SINCE 1950 INDICATE DAIRY FUTURE IN FOUR STATES

It's not difficult to locate the areas of concentrated milk production in the U.S. They are close to large population centers. Dairy farmers in Wisconsin and the central northeastern states of New York, Vermont and Pennsylvania accounted for about 30 per cent of total output in 1962.

To get an indication of the future for dairying in these areas, specialists recently analyzed their costs and returns since 1950.

Grade A producers in Wisconsin probably have the brightest future of the farmers surveyed. Their marginal costs (the expense of producing each additional 100 pounds of milk) were consistently below milk prices during 1950-62. Thus they can continue to increase their returns by adding to their herds and producing more milk per cow.

By comparison, the prospects for grade A producers in the central northeast are less promising. Although marginal costs were below the price per hundredweight for milk on farms in the tri-state area during 1950-61, the difference narrowed sharply in 1962. These dairymen were operating at nearly optimum production levels and it would be unprofitable for them to expand. More and more dairymen in the central northeast are likely to consider other alternatives.

Grade B producers in Wisconsin have had marginal costs nearly equal to prices throughout the past decade. These men are also unlikely to increase output and many will find other opportunities. However, some grade B dairymen could profitably switch to grade A production.

Farmers in all three groups recorded substantial increases in gross income from dairying during 1950-62. The eastern Wisconsin grade A producers reported average gross returns of $14,594—87 per cent above 1950. Grade B operations in Wisconsin recorded a 67 per cent gain in income, totaling $8,315 in 1962. Gross income in 1962 was $12,882 for dairymen in the central northeast—62 per cent higher.

Expenses rose even more than gross returns during the past 12 years. The increases were 92 per cent on Wisconsin grade A farms, 85 per cent for northeastern producers and 70 per cent for the grade B operators. *(3)*

Man-Hours of Labor for Livestock Reduced With Improved Management

Bigger flocks and herds, modern equipment, better management—they add up to less labor per bird or per head. This has been the trend since the early 1900s and particularly since the late 1930s.

Man-hours used for livestock include labor for hauling and preparing feed, feeding, cleaning barns and pens, moving animals to and from pasture or range, general care and selling the output. Time spent in growing feed and maintaining pastures and farm buildings isn't counted.

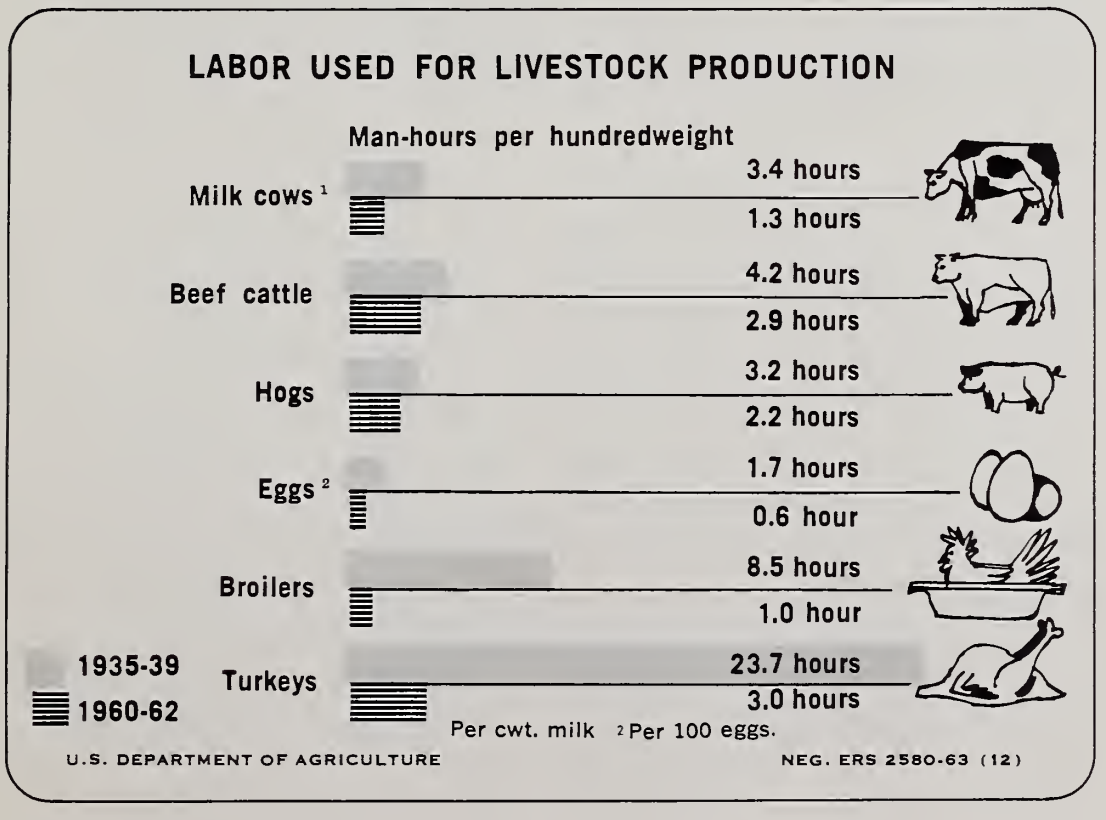
The most spectacular changes in labor needs have been recorded for turkeys and broilers. Labor used per unit of turkey production in 1960-62 averaged only 12 per cent of the requirements a quarter - century earlier. Labor used per 100 pounds of broilers also was reduced to 12 per cent of the 1935-39 figure.

The size of poultry flocks has changed greatly too. From 1954 (the first year data on broilers per farm was available) to 1959, sales of broilers went from 16,000 to 34,000 birds per farm. The average flock of turkeys raised in 1959 contained about 950 birds—13 times the average in 1939.

Almost 150 man-hours were needed in the 1930s for feeding, milking and caring for a milk cow and handling her output. Use of milking machines, automatic feeders, feed and litter carriers, barn cleaners, convenient water systems and milking parlors reduced the labor required per cow in 1960 - 62 to fewer than 100 hours. Bulk handling of milk and use of pipeline installations also have helped to cut time needs.

The new methods and equipment have made it possible to increase the size of dairy herds. In 1939, there were five milk cows per farm—by 1959, the average had risen to nine cows. Most dairy chores can be done for a large herd in almost the same time needed for a small one so the trend to larger herds has helped to reduce man-hours per cow. While labor requirements dwindled, improved breeding, better feeds and feeding methods and superior management resulted in more milk per cow. Milk production was almost 7,200 pounds per head in 1960-62 compared to 4,400 pounds in 1935-39.

The time used for beef cattle and hogs dropped almost as much as did the requirements for dairy and poultry output. Man-hours per unit of production have been cut about 30 per cent since the late thirties. However, much hard work is still the rule for beef and hogs. *(4)*



Broiler and Turkey Production Rises Despite Decline in Hatchery Capacity

As 1963 began, the nation's chick hatcheries had a rated capacity of 494 million eggs. The comparable figure for poult hatcheries was 54 million. During the past decade, chick hatchery capacity declined 12 per cent and poult hatchery capacity, 1 per cent. These reductions occurred despite a 135 per cent increase in broiler production and a 48 per cent increase in turkey production. The larger number of chicks and poults came mostly from fuller use of the plants remaining in business and, to a much lesser degree, from an improved rate of hatch.

Two developments have contributed to the greater use of the capacity of hatcheries in recent years. One is the decline in seasonal demand for chicks and poults, which has meant the fuller use of facilities throughout the year. The other is the change in the organization of the poultry industry, which has created the incentive for a better balance between hatchery capacity and the other sections of this industry.

Seasonal variation in demand has been reduced much more for chicks than for poults. Broiler chicks, with a relatively stable year-round demand, have come to account for an overwhelming proportion of all chicks produced and even egg producers have shifted more of their chick purchases from spring to other seasons. In 1962, as a result, about 57 per cent of all chicks were pro-

duced in the first six months of the year, compared with 71 per cent in 1952.

For poults the change in the monthly distribution of hatch has been much smaller. In 1962, 83 per cent of the annual poult hatch occurred in January-June, compared with 88 per cent in the same months of 1953, when hatchery data first became available.

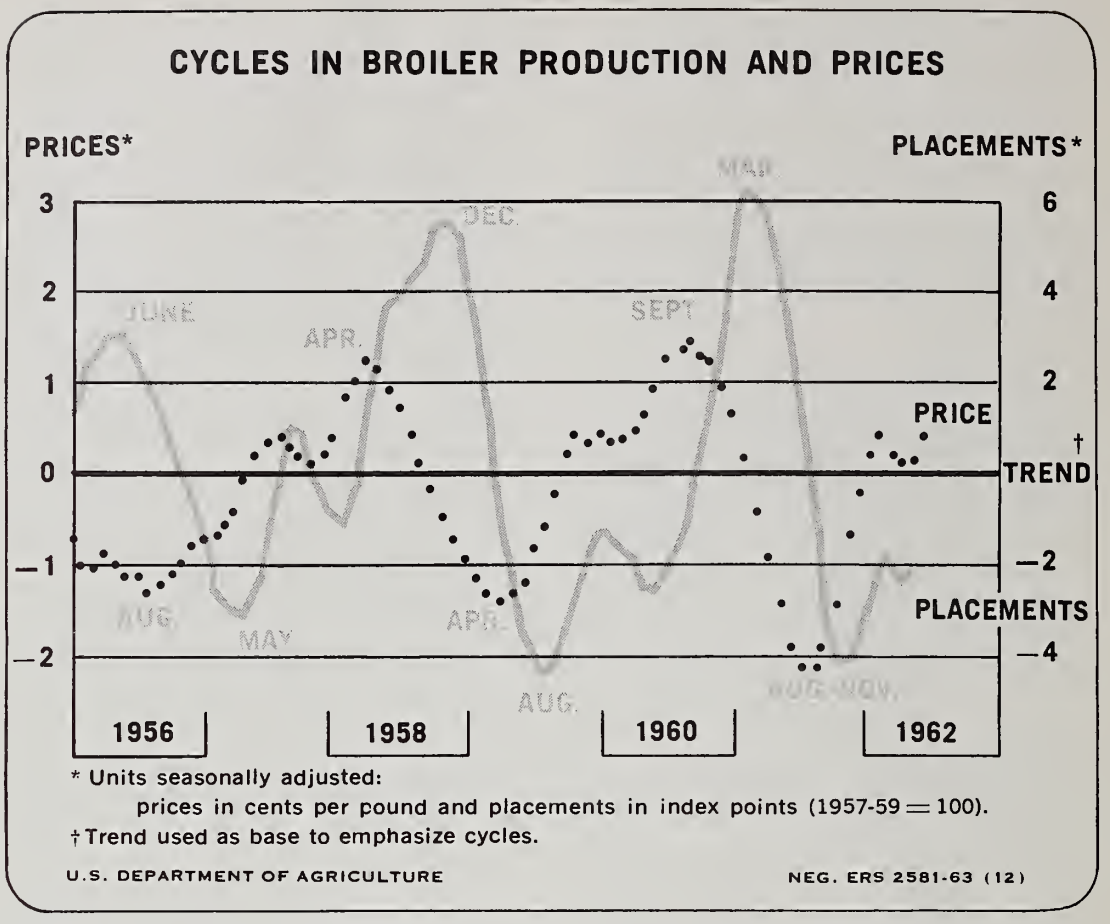
A pronounced trend toward fewer but larger operations has been the rule in the hatchery industry for some time. This shift has accelerated since 1952. At the beginning of 1963, the number of chick hatcheries in the U.S. totaled 2,911, compared with 6,890 on January 1, 1953. During the same period, the number of poult hatcheries dropped from 1,343 to 551. The remaining hatcheries doubled in size but this didn't entirely offset the decline in numbers.

Increases in the scale of hatcheries and greater use of existing capacity have helped to lower chick and poult costs. Prices paid to commercial hatcheries for broiler chicks averaged 10 cents apiece in 1962. In 1952, they cost 15.5 cents. The average price for poults was 56.5 cents in 1962, down from 66.7 cents a decade earlier. *(5)*

Extreme Cycles for Broiler Industry Blamed on Product's Erratic Demand

Boom or bust is the story of the broiler industry. From 1952 to 1962, broiler producers have gone through three cycles in production and prices. These upward and downward movements appear to have occurred largely because the growth in demand for broilers has been uneven.

Using the index of monthly broiler chick placements as an indicator of production and the monthly prices producers receive for broilers, economists have charted the two most recent cycles. Both of the cycles in production were 27 months long with the upswings lasting longer than the downswings. Placements were 19 months in reaching a peak compared to only eight months reaching bottom.



In contrast to production, broiler prices took 32 and 28 months to go from low point to low point. Prices moved up for 20 and 17 months, slid down over 12 and 11 months. The bottom in prices came four and five months after peak chick placements.

At the other end of the cycle, when production is down and prices up, there is even more lag between the two movements. The peaks in price came about a year after production was at its lowest ebb and eight and six months before broiler chick placements topped out in the next cycle. Again allowing for time in growing the birds, the high-points in prices occurred 10 and eight months before production was cut.

Related to the lag in placements is the concurrent cycle in broiler hatching flocks. Generally, placements of pullet chicks in hatchery flocks are stepped up six to 10 months after an expansion in broiler chick placements. After prices for broilers have been down for some months, the number of pullets going into hatchery flocks is reduced. However, the existing flocks remain intact because practically the only immediate cost for these birds is feed. And, the eggs which otherwise would be used to hatch broiler chicks can be sold for table use. In this respect, the egg market provides a floor below the price of hatching eggs and puts some limits on the loss. The egg market also tends to encourage the production of more hatching eggs than would otherwise occur.

With knowledge of the fact that cycles do occur, why do producers continue to increase chick placements six or eight months after prices for broilers decline? Although prices begin to drop off, they generally remain favorable for about five months after the high point of this cycle. And, even after prices are too low to cover the total cost of production, most firms will continue to maintain output as long as possible. *(6)*

Harvesting and Storing of Wet Corn Offer Farmers Choice of Methods

Everything has its pros and cons — including harvesting and storing wet corn.

Wet corn can be harvested as ear corn and ground, rolled or chopped. Or it can be shelled as it is harvested and either stored whole or rolled or cracked. Here the shelled corn generally holds the advantage because two men can handle the harvest operation. Harvesting wet ear corn may require a three-man crew because of the separate grinding operation.

Field losses — Field losses for ground ear and shelled corn are about the same with one exception. Experiments have shown that for field shelling, combines have a slight edge in efficiency over picker-shellers.

Storage and feeding — Fewer problems are involved with storage and feeding of ground ear corn compared with shelled corn. The ground ear corn is less likely to bridge-up in the silo. Ground ear corn and rolled or ground shelled corn are most commonly stored in concrete-stave silos while whole shelled corn is stored in airtight structures.

Investment — Investment in storage structures ranges from 55 cents to $1 per bushel for shelled corn in general. Although the type of storage commonly used for ear corn is cheaper, the investment per feed unit is higher because the ground ear corn takes up more space. As a result, costs for ear corn are roughly one and a half times those for shelled corn.

Total costs — Per bushel, the total annual costs of harvesting, grinding and storing ground ear corn are also higher than the expense for shelled corn. However, feeding tests have shown ground ear corn to have 10 per cent more feed value per bushel than shelled corn. Allowing for the higher feed value, the costs of handling ear corn are reduced to about 4 to 6 cents per bushel less than shelled corn. *(7)*

Here's How: If you know the number of bushels of grain by volume in a crib, here's how to find the number by weight. *(8)*

For example, a bin contains 1,371 bushels of shelled corn by volume and the test weight of one bushel is 46 pounds. The correct conversion factor from the table is 0.82. The solution is:

0.82 X 1,371 = 1,124 bushels by weight

Test weight of a bushel (Pounds)	Conversion factors		
	Wheat, soybeans and beans	Flax, shelled corn, grain sorghum and rye	Barley
64	1.07	—	—
62	1.03	—	—
60	1.00	1.07	—
58	0.97	1.04	—
56	0.93	1.00	—
54	0.90	0.96	—
52	0.87	0.93	1.08
50	0.83	0.89	1.04
48	0.80	0.86	1.00
46	0.77	0.82	0.96
44	0.73	0.79	0.92
42	0.70	0.75	0.87
40	0.67	0.71	0.83
38	0.63	0.68	0.79
36	0.60	0.64	0.75

Oklahoma Study Shows Profit Levels For Combinations of Farm Products

Most farmers don't put all their eggs in one basket. They generally combined several crop and livestock enterprises in order to maximize profits. How much of a crop or kind of livestock a farmer decides to produce depends a good deal on the price for each product relative to the others.

In order to explore the relationship between the prices for products and their output on a farm with several enterprises, economists recently studied the possibilities in organization available to operators of representative clay soil farms in southwestern Oklahoma. Farmers in this area produce mostly field crops—with supplementary livestock enterprises. A representative farm having 1,280 acres with 1,000 acres of cropland was used in the analysis.

In the study, 30 maximum profit combinations of enterprises were developed — based on five prices for cotton, three prices for wheat and beef cattle and two different interest rates on capital investment.

Net returns from the assortment of enterprise combinations ranged from $2,000 when prices for all three products were low and 18 per cent was charged for nonland capital to over $21,000 with high prices for all products and 6 per cent interest.

When all prices are at the assumed base (lint cotton 22 cents per pound, wheat $1.25 per bushel and cattle $21 per hundred pounds) and interest rates 6 per cent, no cotton is in the optimum organization. Wheat occupies most of the cropland and 300 head of stocker cattle are included. Estimated net return to land and operator's labor and management is $11,300.

If wheat and cattle prices are at base prices but cotton is sold

20 per cent above base, then cotton replaces most of the wheat and net returns are increased about $1,800. If wheat and cattle prices are 30 per cent below base, cotton at a price of 22 cents per pound would occupy most of the cropland. Estimated net returns would be $6,700.

When the prices for wheat and beef move up, the organization contains very little cotton even at higher lint prices. When wheat is $1.62 per bushel, cotton is grown only in a cotton-fallow-wheat rotation. When wheat is sold for $1.79 or more, no cotton is produced. The farmer would get the maximum net return of $21,000 with both wheat and beef prices at the highest assumed level (30 per cent above base.)

In contrast, when wheat and cattle prices are very low the organization contains a sizeable acreage of cotton even if the price is as low as 18 cents a pound. However, in this situation about 20 per cent of the cropland would remain idle. Net returns would be sharply reduced.

When 18 per cent is charged for capital (other than land), large acreages of cotton occur with low prices for wheat or high prices for cotton.

The cattle enterprise is more important when interest is set at 6 per cent, cotton prices are low and both wheat and beef prices are relatively good. *(9)*

Agriculture's Output in Puerto Rico Less Important to Island Economy

Puerto Rico is becoming less dependent on agriculture for its economic power. From 1920 to 1950, sugar and such related products as rum and molasses accounted for about 60 per cent of the value of the island's exports. From 1950 to 1960, the value of these exports dropped to 21 per cent of the total, while nonagricultural exports increased from 30 to 64 per cent of the total. In the 1950 to 1960 period, agriculture's contribution to total income dropped from 26 to 15 per cent; manufacturing and construction increased from 19 to 28 per cent.

A major reason for the rapid growth of industry on the island is the celebrated "Operation Bootstrap," a program to encourage private capital investment through measures such as tax holidays, worker training, plant site development and loans.

Standards of living in Puerto Rico climbed rapidly in the postwar period. Per capita real net income increased from $265 in 1947 to $477 in 1961. However, unemployment remains a serious problem. Some parts of the economy increased very little in the postwar boom. *(10)*

Alternative Budgets Help Operators Spot Future Errors in Farm Plans

It's the wise farmer who can tell for sure which change will mean profit and which one will turn into a loss.

Suppose you decide to add more hogs and then find there isn't enough time to take care of the cows. So you cut back on your dairy operation. Then you plant more corn for feed, and that means you are cutting back on the wheat and the field beans.

Right about there you discover your whole income structure has changed — not so much money coming in from cash crops.

So there you are, down at the bank for a loan to tide you over until it's time to market the hogs. And while you are at the bank you may want to talk to the manager about a bigger, long-term loan to build the housing that your hogs require.

And that leaves you with the question: Was it worth it? It takes some detailed bookkeeping to find out whether the change will mean extra profits, or just bigger expenses. The work should have been done before setting off the chain reaction.

To offer some measure of the ramifications of making a change, economists in the Economic Research Service and Michigan State University worked out a series of budgets based on selected farms in Michigan.

They started out with prices and practices of the late '50s, taking into account available acreage, cash on hand, debts, existing buildings and the quality of the soil.

Then they redesigned the farms to meet a range of price conditions projected for the mid-'60s, on the basis of average to better than average yields, milk production and feed requirements. No change was made in the size of the farm.

The figures aren't up to what the best farmers could do, but represent the potential of the average farmers, using improved techniques.

Here are some of the profitable changes for four dairy-hog farm combinations — with prices for milk ranging from high to low.

One of the farmers is too much in debt to go in for the milk parlor or bulk tank necessary to a labor-saving dairy enterprise. If milk prices stay on the high side, he may end up with the same size dairy herd, in a slightly remodeled stanchion barn, while keeping a few beef cows and calves to feed. The crops, of course, will be tailored to the need for feed, with plenty of corn and alfalfa.

If the blend price for milk slides to the lower end of the scale, the farmer is apt to find himself out of the dairy business, and looking for a half-time job off the farm. Even so, he should be able to add some hogs to the farm to take up the slack left by dairying.

The other three farmers have enough money to make a profit out of dairying, whether the price of milk is on the high or low side. *(11)*

Fun in the sun is for the tourists; but the recreation owner gambles his labor and money to make it pay off

Vacation Enterprise May Up Income, but It's Risky

Americans spend some $40 billion a year on recreation. A good part of the money pays for outdoor recreation. With incomes on the rise, and work weeks getting shorter, there should be even more money flowing back into the hills in the next decade or so.

There is, of course, a catch. Recreation, like farming, is not an easy way to make money.

A recent study of outdoor recreation in western Oregon spells out the opportunities—as well as the hazards—of recreation as a business enterprise. The study, conducted by ERS in cooperation with the Oregon Agricultural Experiment Station, covered 17 different types of operations, ranging from picnic grounds, fish ponds and hunting preserves to riding stables, summer camps, and ski resorts. The size of the project was anywhere from less than an acre for a fish bait farm to 500 acres set aside for hunting.

Pulling in the customers is the hardest part of the job. All but one of the recreation enterprises in the study were on or close to good roads. And most of them were within 25 miles of a city. Yet less than a third of the owners reported they were operating at full capacity during the peak season.

Lack of advertising was one of the reasons the recreation ventures failed to do more business.

As the study points out, many of the farmers simply were not prepared for the kinds of problems they met in the recreation business, and most of the operators seriously underestimated the amount of work involved.

Not surprisingly, the financial reports included in the study run from modest profit to net loss. The owner of a fishing float, for instance, cleared over $200 a year on an investment of only $600. And one farmer gets $1,000 a year from a gun club for hunting rights on his 700-acre farm.

But another operator in the same area lost $5,000 in four years with his pheasant and turkey farm. *(12)*

Outdoor Recreation Is Big Business in Ozark Forests

Some enterprising farmers in the Missouri Ozarks bolster their incomes by selling recreation.

Instead of selling lumber, the man who owns a forest can sell permission to hunt, fish, swim or roam around in the woods and enjoy the beauty of the landscape.

It's profitable too. Providing recreation and services to visitors can be a better money maker than growing trees.

A nine - county area in the Ozarks dramatizes the vast potential for outdoor recreation. Forests cover more than 60 per cent of the Big Springs area. In 1959, 240 sawmills and 40 wood processing plants in the region employed 1,500 men with a payroll of less than $4 million.

The landowners received $771,000 for all the timber cut in the nine counties.

For that same year, 1,660 retail and personal service firms in the area did more than $48 million worth of business. The local merchants estimate that about 20

per cent of their business or $9,-800,000 came from tourists — about equal to the money all sawmills and wood processing plants made from timber in the area.

In other words, recreation has an income potential that goes largely untapped, mainly because the local residents have little knowledge at hand to begin such enterprises.

To tap this recreation resource, the residents of the area need to know how much their individual operation will cost per day, week or year. They need some way to gauge their profit. They need to know about liability risks and insurance.

One way to attract tourists to outdoor recreation is to have good restaurants and lodgings along the way. Almost all businessmen in the Ozark area agreed that improving the quality of restaurants is an important key to further recreational development. Roads, too, play an important role in bringing more tourist dollars into recreation areas. A road to a scenic spot may be more valuable to the local economy than a road to a timber stand. But here, too, the community lacks information to help it get started.

To meet these information needs, ERS recently began studies in New England, Ohio, Missouri, Arkansas, South Carolina and Oregon. *(13)*

Dwindling Population Has Plagued Rich and Poor Counties for Years

Two real counties with imaginary names share a problem common to much of rural America.

Lake County in Wisconsin is poor. Farm County in Iowa is prosperous. Both have been watching their populations dwindle for decades.

It isn't hard to understand why Lake County has seen its population decline for years. The area can boast neither a prosperous agriculture nor industry of any significance.

Dairy farms dot the landscape. But the climate and the soil do not lend themselves to very productive farming. And the abandoned sawmills and logging camps bear witness to the cut-over forests that once sustained a brief industrial boom.

Ever since the 1920s, the population has been drifting away from Lake County.

Here and there in Lake County, tourists have helped to shore up the economy. By and large, however, the peacefulness of the land suggests the quiet of a community gradually going to sleep.

Farm County, to the southwest in Iowa, is a world of agriculture apart. In the heart of the Corn Belt, its farms are thriving. They sustain the entire community. In fact, it takes about two nonfarm trade and service workers to handle the needs and business of one high-volume farmer in the area.

But the successful agriculture of Farm County has had much the same effect on population as the lagging production in Lake County. With fewer and bigger farms, the number of farm workers needed is less every year.

The technological advances that have mechanized the farms, made them bigger and more productive, have not at the same time created an equal demand for products and services in the area.

In 1940 there were 2,159 farms in the county; in 1959 there were only 1,682. From 1950 to 1960, the net migration figure for Farm County reached 18.5 per cent.

With few exceptions, the small towns that serviced the agricultural population in Farm County, have had less and less business to keep their stores open.

The prosperous fields of Farm County have, however, helped to soften the effects of the population migration. The loss of a growing, spending population has been more gradual for Farm County; the adjustments are a little easier to make. *(14)*

The Economic Cards Are Stacked Against Most Rural Communities

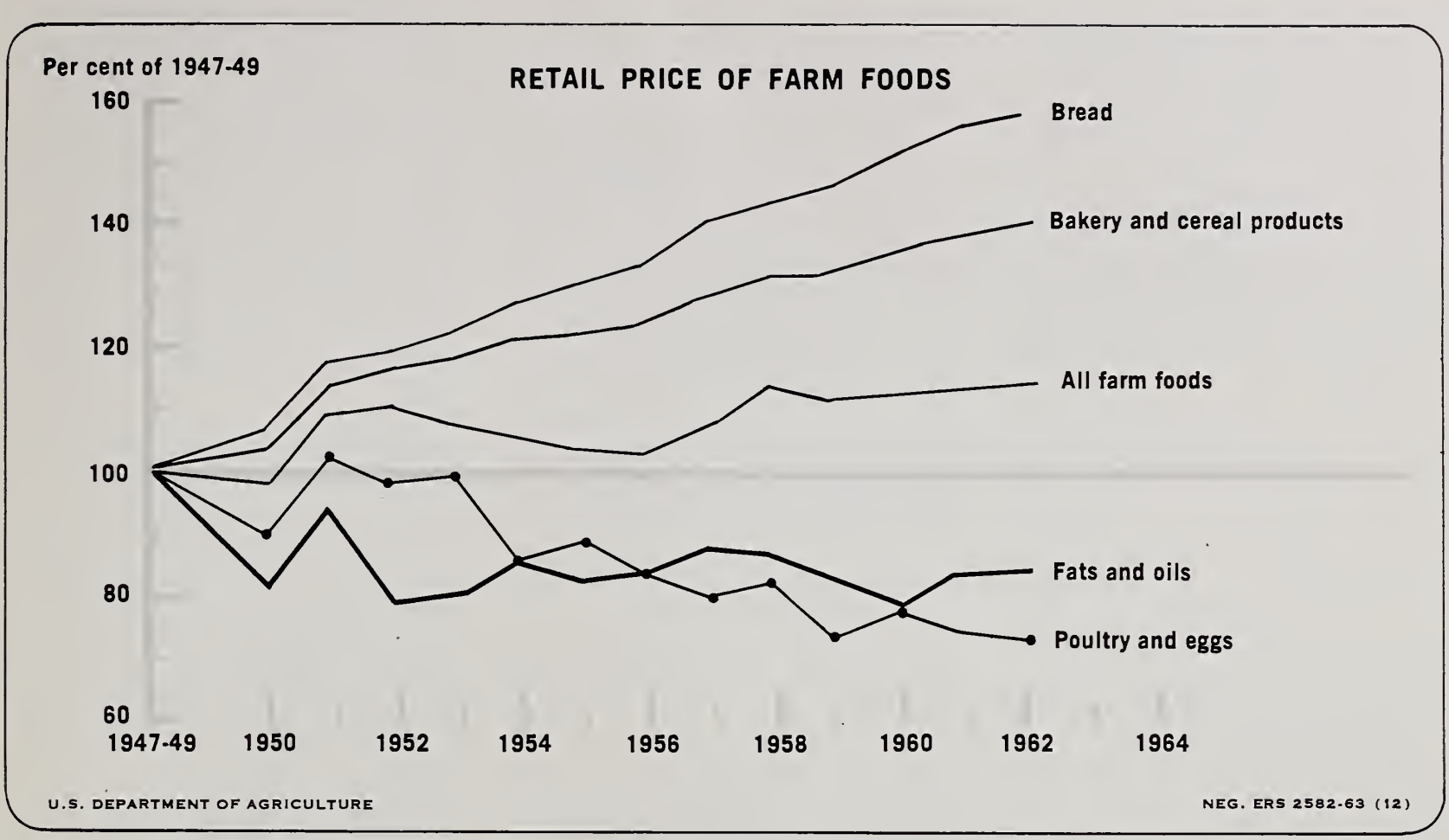
In 1950, almost seven million persons worked in agriculture, according to the Census of Population. By 1960, the number had shrunk to about four and a quarter million. This means that about three million agricultural workers had to find other work.

But it's difficult for rural persons to find a job in the city. Most large employers in an industrial community use a seniority system for hiring. Before a man from the country is hired, he must wait until the roster of laid-off city employees is exhausted before his application is even considered. The way things stand now, the ex-farmer is apt to end up with a menial job.

The population that remains rural is having its problems too. Although people in rural areas represent a sizeable chunk of the U.S. population—30 per cent—many are not sharing the general prosperity of the country. For example, in 1959, the annual median income of urban families was $6,-166 compared with $4,750 for the rural nonfarm families and with $3,228 for the farm families.

Furthermore, rural people frequently face higher costs for local government services. The more rural a county is, the more likely it is that it lost population during the past decade—completely rural counties lost 7 per cent of their population on an average. This population loss means that fixed costs of running government must be divided among a smaller number of people.

Another factor that increases expenses in rural counties is the dependency ratio. The persons who leave the rural area are younger, healthier wage earners. The persons left behind are the very young and the very old. Because of this, rural counties have relatively high expenses for schools and for welfare. *(15)*



FREEZING BREAD MAY FREEZE THE COST CURVES

While the industry sings that "food is a bargain," a few sour notes can be heard from within the chorus and the bakers are flattest of all.

Their cost curves and prices are soaring while per capita consumption of bakery products continues to skid.

There's a fair chance that a greater accent on freezing could help to cut some of the costs, keep prices from rising as much as they have and lure the housewife into putting bread on the dinner table more often.

To start with the end of the story, bakers should look at consumption trends for potatoes, which have until recently shared the same unfashionable status on the menu as bread and cereal products.

But in the late 1950s the potato abandoned the role of dull old standby on the menu and turned itself into a multitude of fancy convenience foods. Fifteen years ago there were about 10 processed potato products on the shelves; today there are around 50, most of them frozen or dehydrated.

Per capita consumption has not only ended its long-term decline, it has even risen a little.

The parallel with the bakery industry is close, if not identical. The only baked goods that can boast of increased consumption in the past 15 years are the convenience foods.

Shipments of specialty breads increased from less than 200 million pounds in 1947 to 630 million as long ago as 1958, a threefold increase.

Back in the bake shop, freezing could be turned from the job of producing convenience to cutting costs for the manufacturer and, hopefully, to producing a fresher product for the customer.

By freezing inventories of dough, for instance, production could be kept to a regular level.

The central bakery could also sell frozen unproofed or unbaked breads. Unproofed bread is yeast dough that hasn't been allowed to rise. The loaves could be baked at the retail store, as they are needed for sale. The process would help reduce the high cost of stale bread. Or the frozen unbaked loaves could be sold to restaurants or housewives.

Two firms on the West Coast are already marketing frozen, unproofed bread dough in three-loaf packages for 49 cents. One ordinary loaf of white bread cost 28 cents in Los Angeles in 1962.

Freezing could serve another purpose in the wholesale-to-retail movement. The baker could ship frozen breads, cakes and pies to the retailer who would keep them in storage until he was ready to defrost and sell them. It would be one way to reduce the number of deliveries needed. *(16)*

Smaller Farm-Retail Spread Gives Orange Concentrate an Advantage

The year 1946 is an important date for processors of frozen orange concentrate. That's when their product was first introduced on the market. Since then, considerable change has taken place in sales of orange products and in marketing costs of processed products.

By 1953, the business of processing orange concentrate was in full swing. Nearly half of the orange crop that year was sold processed with 30 per cent in frozen concentrate. Over the next 10 years, the portion of the crop processed steadily increased and in 1962, 63 per cent of total production was sold as concentrate and 10 per cent canned.

Part of the explanation for the increase in processing of frozen concentrate can be found in a comparison of marketing costs. In 1953, the farm-retail spread for oranges sold fresh was 20.4 cents compared with 13.4 cents for canned juice and 14.9 cents for frozen concentrate (24-ounce single-strength equivalents). In 1962 the spreads were 27.2 cents for fresh oranges, 16.3 cents for canned juice and 14.3 cents for concentrate.

Concentrate holds an advantage in marketing costs because it is less bulky than canned or fresh oranges and is less perishable than fresh oranges. As a result, the expenses of transporting and retailing concentrate are smaller and more than offset the additional costs of processing.

As a result of the savings in transportation, retail stores in Washington, D. C., were able to get a 6-ounce can of concentrate from Florida for less than 1 cent during 1959-60, compared with 3 cents for an equivalent quantity of fresh oranges. Washington stores could sell the 6-ounce cans for a markup of less than 5 cents compared with 7 to 13 cents for the equivalent quantity of fresh oranges. *(17)*

Promoting the Peach

What's the best way to sell fresh peaches? Through promotion of course. But what kinds of promotion are most effective? Will point-of-purchase promotion sell more peaches than special displays with advertising support?

To answer these questions, ERS, at the request of the Washington State Fruit Commission, is conducting a study to evaluate the effect of promotional themes and techniques.

By measuring the results of advertising campaigns pushing the fresh fruit in selected cities, USDA hopes to offer the peach industry useful information on the best way to raise sales. *(18)*

Supermarkets Cite Need for Ad Tie-In To Make Most of In-Store Promotion

The nation's supermarkets use some 3 million banners, streamers and other point-of-purchase materials.

The figure comes from a recent ERS study of p-o-p promotion in the 28,000 food stores in the country with annual sales volumes of $300,000 or more. At the time of the survey, the stores were using from 88 to 167 display pieces per store, depending on the floor space. Seven out of 10 of the promotion pieces were for specific food items.

Commodity groups supplied only 10 per cent of the materials used for all food items.

But in the produce department, commodity groups were the source of 60 per cent of the materials not supplied by retailers themselves.

A companion study conducted by a national women's magazine in cooperation with ERS surveyed key officials at the retail and wholesale level to note their attitudes toward p-o-p materials. Some of their findings were:

—At the head of the list of requirements for effective point-of-purchase promotion, according to the retailers and wholesalers, were tie-ins with national advertising promotion of high-profit items and cash or merchandising allowances.

— Posters, pennants and streamers were considered the most effective pieces by more than half the retailers and wholesalers.

—All the officials wanted colorful displays and most voted for red as the most effective color.

—Six out of 10 officials surveyed indicated product advertising played a big part in their acceptance and use of promotion items.

— Headquarters' approval of promotion items was a must, according to the majority of the store managers for corporate chains.

— While half of the officials surveyed thought the supply of display material just about met their needs, a third said they got too much and a sixth of the group thought the supply too small.

— Close to six out of 10 store managers said they used three-fifths of all materials supplied them. Few managers used less than half the material they received. *(19)*

Hard Core Answers

What research has been done on the marketing of apples, fresh and processed, in the post-war years?

To help answer the question ERS economists, at the request of the apple industry, have compiled a digest of research studies on apple marketing from 1945 to 1960.

The digest is more than a bibliography. The authors discuss the underlying problems and review significant research.

The authors recommend more research in such areas as the demand for fresh vs. processed apples and the effect of changes in margins on producers, distributors and consumers. *(20)*

Railroads Seek More Farm Traffic As Good Hedge Against Recession

Farm traffic is one of the railroads' best hedges against business depression.

In 1949, a depressed year, trains hauled 21 per cent less industrial and other nonfarm freight than they did in 1947. But farm traffic was down only 12 per cent.

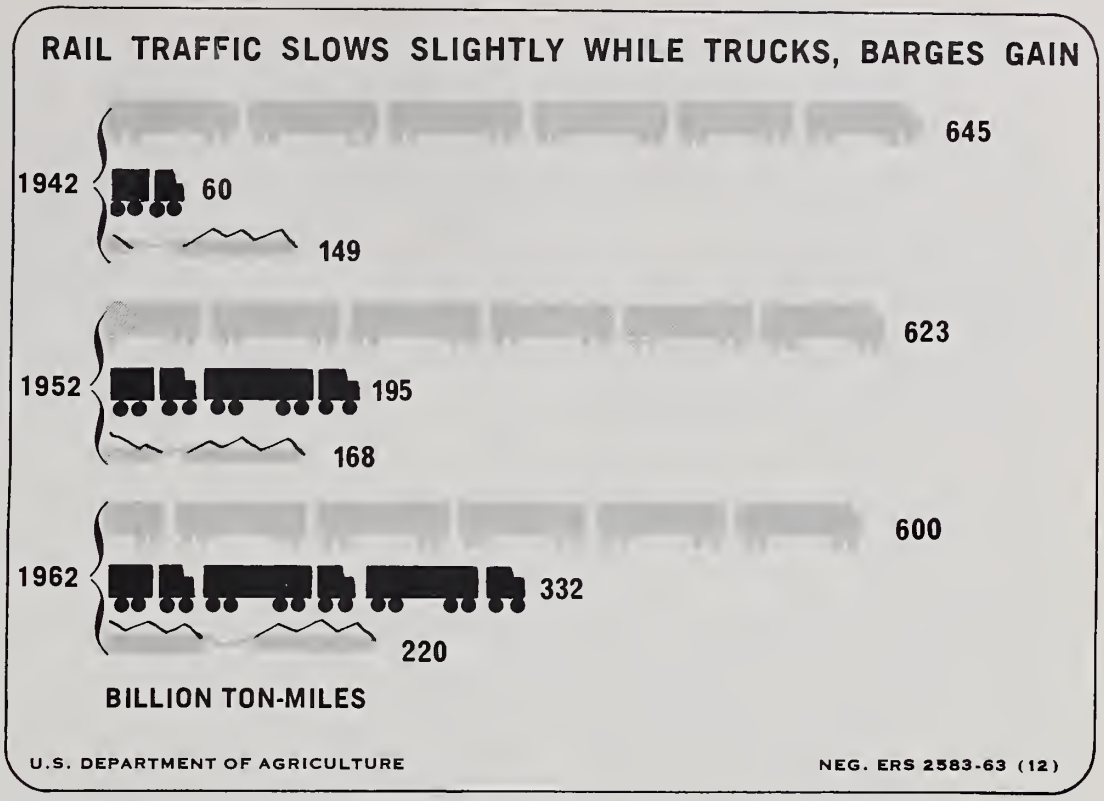
The same thing happened during the 1961 business slowdown. Nonfarm traffic on the rails dropped 23 per cent below the 1947 level, but agricultural traffic fell only 8 per cent.

This is one big reason why railroads want to regain more farm business. Yet the whole railroad traffic picture is about where it was in the early postwar years. True, they are hauling almost as many ton-miles of freight now as they did in 1947. But this fact in itself means the railroads have lost ground because transportation needs have grown.

While industrial production went up 67 per cent from 1947 to 1961, industrial rail traffic fell 23 per cent.

While farm output climbed 32 per cent in the 15-year period, rail traffic in farm products declined 8 per cent.

Trucks are hauling most of the extra goods that the farm and nonfarm economy is turning out. The barge and pipeline share has increased to a lesser extent. Since 1947, ton-miles of intercity highway traffic have more than tripled. Barge traffic has almost doubled. *(21)*



Recent Study Helps Supermarkets Cut Labor Costs in Meat Section

Running a supermarket at a profit gets tougher when employee wages increase faster than sales per man-hour. That's what has happened in recent years. Wages account for nearly half of the total operating cost and they're the largest single expense in a supermarket.

To find ways to reduce labor costs and provide customers with improved service in meat departments, ERS, in cooperation with Ohio State University, analyzed four Ohio supermarkets.

Researchers watched meat department employees go through the whole meat operation—from the receiving door to the customer's cart. The operation included stocking, cutting and wrapping the meat.

Researchers concluded, for one thing, that managers were spending too much time stocking meat —less skilled employees should perform this work and free the manager for more important jobs.

All in all, employees spent 69 per cent of their time on direct work and 18 per cent on indirect activities (work not directly related to meat, such as cleaning up). The remaining 13 per cent was idle time.

By using the findings of this study to determine the labor required to handle different special features, supermarket operators can reduce the costs of retailing meats. *(22)*

King Cotton Travels More by Truck But Rails Get Bulk of Royal Traffic

Like a lot of other farm products, cotton is being switched from rail to truck transportation in certain areas of the South.

Warehouses that handle over 90 per cent of the total flow of cotton moving throughout the producing states were surveyed recently by the Agricultural Stabilization and Conservation Service. These warehouses reported that in the year ending July 1962, approximately 25 per cent of all cotton they handled was moved by truck over the highways. An additional 8 per cent was cotton moving the very short distances between port warehouses or dockside.

Some 32 per cent of the warehouses surveyed, largely in the Southeast, used trucks entirely; the rest relied on both truck and rail.

For the cotton states as a whole, the survey showed that railroads still handled two-thirds of the total warehouse shipments. But several states, notably in the Southeast, used trucks more than trains. *(23)*

Higher Priced Markets for Farm Fats More Than Offset Loss in Detergents

For centuries animal tallow and grease had been used as the active cleansing agents in soaps. Then the Germans, cut off by World War I from overseas sources of natural fats, used coal tar to develop the first commercial synthetic soap, and the synthetic detergent industry was on its way.

Today animal fats, along with vegetable and nut oils, are the active agents in most toilet and hand soaps. And they're used extensively in some synthetic detergents. But the cleansing agent in the bulk of household detergents is now derived mostly from petroleum.

A new ERS survey of detergent manufacturers shows this relationship. Farm products are at a disadvantage in the game. For one thing, supplies of the petroleum chemicals are plentiful year-round. This has not always been true of the animal tallows and grease which depend on seasonal livestock slaughter. Then too, prices of the petroleum products change infrequently, with changes announced in advance; prices of farm fats and oils tend to fluctuate like other farm commodities without prior notice to buyers.

Continued preference for petroleum products in household detergents isn't going to hurt the fat renderer. He has other outlets that bring higher returns than he gets from low priced soapmaking fats. For one thing, soaps and detergents are only part of the much larger surfactant industry. Surfactant stands for surface active agent and it has a thousand and one uses, from cutting and fabricating lubricants in the metal trade to fire-fighting aids and embalming fluids.

And housewives now count on fat-based softeners in the laundry rinse water to reduce the fabric harshening effect of the synthetic detergents.

Farmers who raise cattle and hogs have little reason for concern about petroleum-based detergents now. Soaps, detergents and other surfactants are the lowest priced outlets for tallow and grease.

There are many other industries that use farm-produced fats and oils. An important one is in the manufacture of livestock feeds where the animal fats command a higher price than in surfactants. *(24)*

Rising Sugar Costs Push Processors Toward Less Expensive Sweeteners

Noncaloric sweeteners and improved forms of corn sirup are giving sugar a run for its money in the big industrial market.

Sugar is still the number one sweetener by a wide margin, but its overwhelming dominance in the market in canned fruits, ice cream and soft drinks is shrinking slowly.

The rising price of sugar is behind much of the shift to corn sirup and dextrose.

The total quantity of sugar, corn sirup and dextrose delivered to industrial manufacturers from 1952 to 1961 increased at 4 per cent a year. However, the rate was 4.0 per cent for sugar compared with 5.3 per cent for corn sirup. Dextrose trailed with a 1.8 per cent increase.

Although prices for sugar and the other sweetners were relatively stable through 1962, price fluctuations have been important enough to concern processors. Price gets special attention in candy, soft drinks, jams, jellies and preserves where the cost of sweeteners is a substantial part of the total for raw materials and where the processor has some more control over the proportion of sweeteners used.

Except in canning, government regulations have little effect on quantities or mixtures of sweeteners used. And many of the fruit canners surveyed recently were using the maximum proportion of dextrose or corn sirup allowed by the Food and Drug Administration. *(25)*

Prices for Cattle Hides and Skins Reached 25-Year Low During 1963

The average American is willing enough to eat more meat—but he's reluctant to buy an extra pair of leather shoes. The result is a major headache for the hide and leather industry.

During 1963, cattle slaughter increased 4 per cent while demand for shoe leather—which accounts for over 80 per cent of all finished leather — remained almost unchanged. Caught in a supply-demand squeeze, hide prices dropped to their lowest level in 25 years. And, as prices declined, buyers placed more emphasis on quality so that poor hides were practically worthless.

While the drop in hide prices was severe—the price index (1957-59 base) went from 106 in 1962 to 85 last year—prices for finished leather were only slightly lower and prices for leather shoes were unchanged.

The only bright spot in the hide and leather market during 1963 was exports. Total hide exports were estimated at about 8 million pieces—a new high, and 18 per cent above the previous year.

The outlook for hides and leather during 1964 includes prospects for another large increase in supplies. Cattle slaughter this year should top all previous records with a gain of 3.5 per cent over the 28.1 million head slaughtered in 1963.

Some upturn in demand for hides also appears likely during 1964. Estimates of leather shoe output indicate a gain of 3 to 4 per cent over the 597 million pairs produced last year. Cattle hide exports may be almost 8 million pieces, nearly as high as the record shipments in 1963. *(26)*

Take a peninsula so strategically located in Southeast Asia it has formed the cornerstone of countless trading empires. This is Malaya, until last September an independent federation of states.

Add one of the world's great ports, long the center of banking, commerce and entrepot trade for much of Southeast Asia. This is Singapore, formerly a self-governing state within the British Commonwealth.

Jump east across a thousand miles of the South China Sea. Lying at the northern tip of the island of Borneo are some 30,000 square miles of mountains and forests so dense only 6 per cent of the land area is used for agriculture. This is Sabah, until last September the British colony of North Borneo.

Finally, cross the southwestern border of Sabah, skirt Brunei, an enclave that remains a British protectorate, and enter a country swept eight months of the year by the Asian monsoons. This is Sarawak, also a former colony of the British crown.

These four dissimilar states make up the five-month-old nation of Malaysia.

Malaysia is virtually unique in Southeast Asia. The new nation is not straddled with the economic problems that confront most developing countries. It has a highly commercialized agriculture, an expanding middle class and ample investment capital. In these respects it's some years ahead of many of its neighbors.

Rubber is Malaysia's economic cushion. The new nation produced 39 per cent of the world's rubber in 1962. Rubber that year brought in 70 per cent of Malaya's foreign exchange earnings. It provided 44 per cent of Sarawak's earnings, 19 per cent of Sabah's. Singapore's raw and semiprocessed rubber exports made up 44 per cent of its total exports.

Before merging to create the new nation, each state except Sabah had already launched its own economic development program.

Malaya was already well into its Second Five-Year Plan. When the first plan ended in 1960, the government's replanting program had increased rubber output 12 per cent above 1955 on 4.5 per cent more acres. Rice output was up 30 per cent on 8 per cent more acres. Oil palms showed a 27 per cent increase in output on 14 per cent more land. The Second Five-Year Plan calls for a 15 per cent increase in total farm output, with a 10 per cent step-up in rubber production.

Sarawak's development program has stressed the planting of more rubber and coconut trees to help farmers develop a production pattern based on rubber and dry rice or coconuts and wet rice.

Singapore's program, of course, has stressed industrial development, with emphasis on finding more jobs for the island's many unemployed.

It's still too early to tell just how the new government plans to mesh, discard or augment these various programs. *(27)*

World Policies for Farm Products Stress Need for Economic Growth

The world trend in national policies for agriculture is turning from an emphasis on the trade restriction programs of the immediate postwar period to a greater accent on economic development.

However, such regional economic developments as the Common Agricultural Policy of the European Economic Community may make it hard for American producers to share as much as they might in increased international trade.

While stimulating more efficient production of some products in member countries, the EEC policies, as they currently stand, have already largely cut the association off from such imports as poultry products. The policies may also cut into shipments of grains and livestock products, many of which can be produced more efficiently outside the borders of the six-member union.

In Africa, trade is linked largely with former mother countries in Europe, though many of the countries are turning more and more to markets outside their traditional sphere of trade.

Agricultural policies in the Far East, governed for the most part by poverty and food deficits, are aimed at increasing domestic food production while hoarding meager foreign exchange earnings through tight import-export restrictions. Notable exceptions to the regional situation are Japan, Australia and Nationalist China, and to a lesser extent, Malaysia, Thailand and New Zealand.

On the whole, Hong Kong and Malaysia have the most liberal trade policies in the British Commonwealth. Controls to aid domestic agricultural production in the Commonwealth range from the use of long-term tariff preference for member countries to *ad hoc* bilateral commodity sales between governments. Most of the industrial countries in the Commonwealth have gone far in relaxing their foreign exchange restrictions.

For Red China foreign trade has long been a weapon for use in international policies. And, despite setbacks on the farm, the Red Chinese are still bartering rice for key products of Asian countries.

Back in the Western Hemisphere, industrial development programs in Latin America and, until recently, plummeting prices for some major exports, forced many of the nations to keep rigid restrictions on imports in an effort to conserve foreign exchange. U.S. price support and export pricing policies have been major factors in maintaining stability of export prices for such important regional products as grains, cotton and tobacco.

The hemisphere also boasts three formal trade groupings of its own. The oldest of the current movements, an association of British territories and former territories, has had to modify its programs as some of the larger units became independent and decided against cooperation.

In the Latin American Free Trade Area, taking in most of South America and Mexico, few imports have as yet been displaced by production in member countries.

In the Central American Free Trade Area, made up of El Salvador, Guatemala, Honduras, Nicaragua and Costa Rica, increased demand for agricultural products is being met by imports as well as stepped up production within the group. *(28)*

News Pickups

SOVIET UNION. Police have devised a way to ease the chronic shortage of farm workers in the remote New Lands east of the Urals. People sentenced to forced labor camps can move to state farms instead, taking their families with them. Farms have no guards, no barbed wire. But prisoners must agree to stay on after their prison terms expire.

COMMUNIST CHINA. Worsening food situation in first half of this year may force slaughter of some breeding livestock and poultry. The animal feed thus saved would be used for food.

ALLIANCE FOR PROGRESS. Latin America now gets more U.S. aid per person than any other part of the world. Assistance in 1962 came to $4.82 per person, compared with $2.73 in the Near East and South Asia, $2.71 in the Far East and $2.50 in Africa.

KENYA. One of the new nation's first acts was to ban planting of new coffee trees. Arabica coffee brings in $1 out of every $5 Kenya earns abroad. There's no surplus at the moment. But present acreage will jump output to 70,000 tons in the next four or five years, and Kenya's export quota under the International Coffee Agreement is only 30,000 tons. *(29)*

Tunisia for Tunisians, Less Trade With France Are 10-Year Plan Aims

Controlled at one time or another in its long history by Phoenicia, Carthage, Rome, the Vandals, Byzantium, the Normans, Spain, the Turks and France, Tunisia since 1956 has been an independent country.

In January 1963 the government launched a 10-year, $2 billion development program. About one-third of this amount is earmarked for agriculture. Getting the biggest push are agricultural education and extension services as well as projects to insure better use of land and water resources and better management of crops and livestock.

For the first three years the development program stresses:

—Withdrawal of the economic privileges granted to Europeans during Tunisia's 74 years as a French protectorate.

—Purchase of lands now held by Europeans.

—Redirection of trade away from France.

—Expansion of agricultural industries and diversification of agriculture away from the duo-culture of grains and wines.

Tunisians feel that the need for these reforms lies partially in the fact that while over half their country is unsuited to farming, more than a million acres of the best farmland is still occupied by Europeans, mostly of French and Italian origin, who dominate commercial agriculture. They produce 95 per cent of Tunisia's wine, 40 per cent of the cereals and 10 per cent of the olive oil. These commodities are among the most important exports and the biggest foreign exchange earners.

In contrast to the larger modern farms operated mainly by Europeans, most Tunisian farms are small, methods are primitive and output limited. Few Tunisian farmers have the know-how and resources to produce enough food for their families with enough left over to bring them a little hard cash in commercial markets.

Better education among the farm population, coupled with better use of the country's limited resources, is a must in Tunisia's program to improve its economic position.

Another problem is uncertainty over who actually owns what tract of land. Due partly to complicated Moslem inheritance laws, titles are not clear on as much as three-fifths of the country's arable land.

By itself Tunisia could not finance a $2 billion development program. Help has been promised through the three-year pilot stage by France, Italy, West Germany, Sweden and Czechoslovakia. But the United States is expected to supply $180 million of the proposed total foreign aid of $370 million. *(30)*

Only a Decade Away from Feudalism, Bolivia Has Raised Output, Diet, Hope

Bolivian agriculture emerged from feudalism on the strength of land reform measures of the 1952 national revolution. It looked for awhile like the cure might be worse than the disease.

Production resources were frequently overburdened when the farmers took over the large estates. Some of the best land lay idle when first abandoned by previous owners. Farm technology was obsolete, agricultural training negligible and credit supplies for the individual farmer almost nonexistent. A primitive transportation system limited the flow of traffic from farm to city, and poverty stifled the growth of domestic markets.

In the first years after the revolution, output of grains, potatoes and other crops faltered and overall output began to slip.

Today, many of the problems are still with the nation, but the government can point to some hopeful signs of progress.

As much as 350,000 acres of new land has been planted to crops in eastern Bolivia since 1952. Corn acreage in Santa Cruz alone increased from 20,000 acres in 1950 to an estimated 175,000 acres last year. The area devoted to rice and sugar has also been expanded while yields for potatoes and other crops have been improved.

These efforts have begun to show up in the national diet. By 1959-61, the daily caloric intake had risen to about 1,950 calories per person, compared with 1,800 calories the preceding three years.

The nation has also stepped up the pace of investment in agriculture and is slated for increased foreign aid. U.S. aid to agriculture, which totaled $20 million between 1952 and 1960, is scheduled for expansion, as is aid from other countries.

If the country is able to expand its exports under the national develop nent program it will be able to boost imports, much of which currently come from the U.S. In 1962, our farm exports to Bolivia — largely wheat and wheat flour, cotton, lard, tallow and dairy products—amounted to $9.5 million. *(31)*

U.S. Success in Upping Farm Output To Serve as Guide for Other Nations

About the time President Jefferson was buying the Louisiana Territory from the French, it took 70 per cent of our total labor force to produce enough food and fiber for a population of 5 million.

Today 8 per cent of the U.S labor force produces abundant food and fiber for 190 million people, with enough left over to permit exports of over $5 billion a year. With so much of the working force released from agriculture to take jobs in industry over the span of a century and a half, the U.S. has been able to create an industrial colossus that gives

us the highest living standard in the world.

How did we do it? India wants to know. And so apparently do other emerging countries whose agricultural situation is currently much like our own was in Jefferson's day.

In February 1963 India asked for background material on the "American experience." From this request has come a new ERS report that summarizes the hows and whys of our agricultural revolution.

The report points out that the U.S had the resources it needed—land and labor. Most emerging countries have plentiful supplies of labor. And despite land shortages in some countries, the report stresses that this need not prevent agriculture from moving ahead.

For our success was due in large measure to:

—Large investment in education.

—Extensive research to develop new and better seeds, livestock and farm techniques, all of which was passed along to farmers.

—Farm production and marketing systems that gave both farmers and marketing firms a powerful incentive to increase total output and output per worker.

—Public and private services to help conserve and improve our national resources and assure farmers they would share in the economic benefits of higher production.

—A developing industrial sector. *(32)*

Europe Raises the Odds

Worldwide, U.S. farm exports in fiscal 1963 just about held their own at $5 billion-plus. But they got fewer invitations to Europe than in fiscal 1962.

Our sales to the Common Market were down 10 per cent. The biggest impact of the Market's variable levy system came in this, the first year. Sales of broilers and frying chickens were down 66 per cent.

Sales to the European Free Trade Area, of which the United Kingdom is the largest importer, declined 15 per cent. This seven-member trade union has no variable levy system.

U.S. sales of wheat, feed grains, cotton and tobacco dropped because the area had a good crop year or bought from other suppliers. *(34)*

WORLD OUTPOSTS BUY $1 MILLION-PLUS IN U.S. FOODS

Pinpoints and tiny enclaves on the world map are multimillion dollar purchasers of U.S. farm products.

Each taking well over a million dollars worth of U.S. agricultural products in 1962 were such places as the Canary Islands off the west coast of Africa, the Netherlands Antilles in the Caribbean and the Middle Eastern states of Bahrain and Kuwait.

The Netherlands Antilles topped this special list, with agricultural imports from the U.S. running close to $9 million. The island group took wheat flour, eggs, nonfat dry milk, fresh beef and veal, and fresh fruits.

Our exports to Kuwait were close to $5 million in 1962, including such commodities as fresh and frozen chicken, coffee, milled rice and bakery goods.

The Canary Islanders took U.S. corn and corn meal, along with cigar binder and wrapper tobacco.

There are now well over 100 independent nations circling the globe and many dependencies. Yet only four countries failed to take U.S. products, farm or nonfarm, in 1962. They were Albania, Communist China, Outer Mongolia and North Korea.

Importing some U.S. industrial goods but no farm products were Nepal, Goa, Greenland and the Falkland Islands. *(33)*

Southern Rhodesia Expands Agriculture As Split With North Cuts Earnings

The Federation of Rhodesia and Nyasaland has agreed to disagree. The 10-year-old union was dissolved at the close of 1963.

Nyasaland will become independent in July. Northern Rhodesia will probably follow suit later in the year. Southern Rhodesia will maintain for the time being the internal self-government it has enjoyed since 1923.

The federation's grain marketing board, dairy marketing board, cold storage commission and pig industry board are all being dissolved in favor of separate boards in Northern and Southern Rhodesia. Nyasaland has had separate boards all along.

Financially, Northern Rhodesia will be better off, now that the taxes and export earnings from its vast copper mining industry aren't shared with the other two members of the federation.

Copper accounts for 95 per cent of Northern Rhodesia's exports, agriculture the other 5 per cent.

Industry and commercial agriculture are mainly centered in Southern Rhodesia. The territory produced about 85 per cent of the federation's tobacco, making it the world's second largest exporter of flue-cured tobacco. The government has launched a program to expand agricultural production as rapidly as possible to offset the revenues lost when Northern Rhodesia pulled out.

Nyasaland has development plans on the drawing board, but they will take time and financial help. Right now the territory depends entirely on the food it can grow for home use, the tea, peanuts, cotton, tung oil and tobacco it can sell abroad, and the earnings of some 150,000 workers a year who find employment in the Rhodesias and South Africa. *(35)*

Mass production, little processing make eggs a good consumer buy year after year.

The youngsters may want to wait until Easter to color their eggs and fill their baskets. But the homemaker will find eggs a colorful item on the menu all through Lent.

In the first place, eggs are the nutritious protein component for a whole host of appetizing meatless dishes, from cheese souffles to French pancakes.

Perhaps most important to the thrifty housewife is the fact that eggs are easy on the budget. In fact, while retail prices of most other foods have gone up since 1956, egg prices, along with poultry prices, have actually dropped.

An ERS survey of 10 big cities shows that the average price of large grade A eggs in 1963 was 56.1 cents a dozen. That's 6 cents less than in 1956.

The big reason that eggs and poultry have been able to buck the trend is the vast increase in production efficiency. With better equipment and techniques, farmers have learned how to produce over the last decade or so more eggs and poultry at far less cost per egg or chick.

Here's how the new study by the Economic Research Service traces the decline in retail and farm prices for large eggs over the last few years:

	Retail	Farm
	Cents per dozen	
1956	62.1	37.4
1958	61.8	37.8
1960	59.4	36.0
1962	55.5	31.3
1963	56.1	32.4

The very slight increase in retail price—less than 1 cent—from 1962 to 1963 was due to the fact that farm output and carryover stocks didn't fill the demand created by population increase during the year.

The comparison also shows that the farmer gets a larger share of the consumer's dollar when it's spent for eggs than when it's spent for many other items. In each year shown, over half of the price consumers paid for eggs was returned to the producer. In contrast, the farmer gets only about 2½ cents for the wheat in a 21½ cent loaf of bread. The difference is that eggs require little costly processing while bread takes a great deal. *(36)*

Grant Surrenders

In the last class before lunch Columbus discovered America in 1392. Robert Fulton invented the cotton gin. Napoleon was defeated at Austerlitz.

A good hot lunch can set the record straight. And a good lunch is just what most of the nation's youngsters are getting.

Today three out of four children attend schools that participate in the National School Lunch Program.

This school year some 16 million pupils will eat the nutritionally balanced lunches provided each school day under the program. On a nationwide basis the average cost of providing the lunch is 49 cents, but the children pay on the average only 27 cents. About 10 per cent of the 2.7 billion special lunches served last year went to needy children free or at reduced prices. *(37)*

With Consumption Gradually Rising Turkey Is Table Talk All Year Long

Talking turkey isn't idle chatter. This holiday bird is gradually becoming table talk all year round.

As recently as 1955, we were eating about five pounds of turkey per person a year. In 1963, we ate nearly two more pounds.

In the past, we not only ate less turkey, the little we did eat was apt to be during the fall holiday season. Use of turkey during the holiday months is still ahead of consumption during the first eight months of the year. But use per person outside the holiday season is growing at a faster rate. From 1955 to 1963, per capita use of turkey from January through August went up 53 per cent, compared with an increase of 26 per cent for the last four months of the year.

Over the next few years, we'll probably eat even more turkey than we do now and especially from winter on through spring and summer. And, more of the turkey we eat likely will be in convenience foods. *(38)*

19 Per Cent of Consumers' Income Was Spent for Food Last Year

Americans eat more food today and spend a smaller share of their income for it than ever before.

Last year only about 19 per cent of our income went for food —a fraction less than in 1962, but much lower than the 26 per cent spent in the late 1940s. This year the percentage will be slightly smaller because incomes probably will rise faster than food expenditures.

Excluding alcoholic beverages, we spent about $74 billion for food in 1962, including meals eaten away from home. Last year, with increased consumer income and a growing population, we spent about $76 billion.

This year, total meat consumption per capita likely will remain around high 1963 levels, but the large beef consumption of 1963 probably will be exceeded. Pork consumption this year will be slightly lower.

With population, consumption and retail prices all up last year, we spent a total of 3 per cent more in grocery stores the first nine months of 1963 than in the same months of 1962.

We spent about 5 per cent more in restaurants, cafeterias, and other eating places in 1963 than in the previous year. *(39)*

Higher Pear Prices Show Hidden Cost Of Bad Weather in Nation's Food Bill

Housewives will be paying more for pears again this year.

Because bad weather slashed pear production by one-third last year, housewives paid a lot more for the fresh fruit in retail stores than they did in 1962. They paid a lot more for canned Bartletts, too.

The 1963 pear crop was the smallest since 1927. This small crop pushed pear prices up to 50 per cent higher than in 1962. Poor weather in California and Oregon was largely responsible.

Housewives will discover that there are fewer cold storage pears on hand, too. And supplies of canned Bartletts are much lighter than the heavy stocks a year ago. All this means that prices will continue on the high side. *(40)*

Little Cans of Frozen Concentrate Contain Much of Our Orange Juice

Good things come in small packages—and that includes the 6-ounce can of frozen orange concentrate.

Frozen orange concentrate became a really familiar part of the breakfast scene around 1953. That year, the average American drank 5.9 quarts of reconstituted frozen juice, 1.4 quarts of canned juice and 6.7 quarts of juice from fresh oranges. The cost of 24 ounces single-strength equivalent of each was 19.6 cents for frozen concentrate, 17.7 cents for canned juice and 26.8 cents for fresh oranges.

Considering the difference in prices, it's no surprise that our use of oranges and orange products shifted during the next 10 years. By 1962, we were using 8.9 quarts (reconstituted) of frozen concentrate, 0.9 quart of canned juice and 4.4 quarts of fresh orange juice. Prices were averaging 20.9 cents for 24 ounces of the frozen juice, 22.2 cents for canned juice and 37.6 cents for fresh oranges.

Total use of oranges and orange products was 31 pounds per person from 1953 to 1962. *(41)*

Chewing Tobacco Stages Comeback; Output Steady After Years of Decline

Mark Twain would call it a return to honest living. After years of decline, chewing tobacco has pretty much held its own the last few years. Output in the year ended June 30, 1963, was 64.7 million pounds, about the same as 1961-62, and just slightly under the year before.

Scrap and plug are still far and away the favorites, accounting for nine-tenths of 1962-63 production. While plug ouput wasn't up to snuff, the decline was offset by almost a million pound increase in scrap.

Nearly all our scrap and plug, plus fine-cut and twist, both minor contenders, were chewed at home. Only a small fraction, mostly plug and twist, went abroad. Exports to Australia, our biggest chewing market, were down in 1962-63. But Panama took a wad 15 per cent bigger than a year earlier. Increased shipments also went to the Netherlands and French Pacific Islands. *(42)*

RECENT PUBLICATIONS

The following publications are issued by the Economic Research Service and cooperatively by the state universities and colleges. Unless otherwise noted, reports listed here and under Sources *are published by ERS. Single copies are available free from the Division of Information, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained from the issuing agencies of the respective states.*

SOVIET AGRICULTURE TODAY—REPORT OF THE 1963 AGRICULTURE EXCHANGE DELEGATION. FAER-13.

This is a report on the recent visit by Secretary of Agriculture Orville L. Freeman and his exchange group to the USSR.

The growth of agricultural production capacity of a country depends on the interaction of the natural environment and factors such as the institutional structure of agriculture, organization of farming, labor supply and its motivation, capital equipment, and the status of its agricultural research, technology, farm practices, and farm management. It was with this set of factors that the 1963 survey team was primarily concerned in its investigation. The team's report attempts to bridge the statistical gaps on some phases of agriculture by drawing on local data, personal observation, and experience gained from previous visits and studies. The central agricultural problem in the Soviet Union in recent years has been that of expanding production of food and fiber. There were substantial increases from 1954 to 1958, but since 1958 increases in crop and livestock production have been slight. Because of poor crops in 1963, the Soviet Union imported large quantities of wheat.

AGRICULTURAL CHARACTERISTICS AND FERTILIZER PRACTICES IN THE CACHE LA POUDRE-SOUTH PLATTE IRRIGATION AREA OF NORTHEASTERN COLORADO. By C. F. Davan, Jr., Farm Production Economics Division, and R. L. Anderson, Resource Development Economics Division, and L. M. Hartman, Colorado State University. Colorado Agricultural Experiment Station Technical Bulletin 78.

This report considers current and past characteristics of irrigated farming in the Cache la Poudre-South Platte irrigation area. Considered are: Land use and farm size; irrigation water use by crops; fertilizer use including the constituent analysis, rate applied, and costs; and crop yields. The survey was conducted under a cooperative project between the Colorado State University and ERS.

FINANCIAL ASSISTANCE TO AGRICULTURE IN DENMARK. By Sheldon Tsu, Regional Analysis Division. ERS-Foreign-63.

For many decades Danish farmers have prided themselves on the independence of their agricultural operations. They have traditionally managed their agricultural production and marketing through farmers' organizations and export boards. There has been a minimum of intervention or assistance from the gov-

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ernment. As competition became keener on world agricultural markets and as the disparity between farm and nonfarm incomes continued to widen, Danish farmers turned to their government for financial assistance. This report discusses the assistance program.

ECONOMIC ANALYSIS OF PHOSPHATE FERTILIZER ON IRRIGATED ALFALFA IN NORTHEASTERN COLORADO. By Clarence F. Davan, Jr., Farm Production Economics Division, and Raymond L. Anderson, Resource Development Economics Division. Colorado Agricultural Experiment Station Technical Bulletin 80.

Presented in this report is an economic analysis of the response of alfalfa hay yields to different rates of phosphate in experiments on irrigated land in northeastern Colorado. The analysis is based on a three-year average yield. These experimental yield data are used to illustrate methods of analysis and determination of most profitable rates of fertilizer application. The study was made cooperatively by Colorado State University and ERS.

LIVESTOCK-FEED RELATIONSHIPS, 1900-1963. Earl F. Hodges, Farm Production Economics Division. SB-337.

This bulletin combines into a single publication animal-unit numbers and livestock production units. In addition, it presents the high protein consuming animal unit series; preliminary estimates of feed consumption by various classes of livestock 1960-63; and estimates of feed grain surpluses and deficits by states for the feeding years beginning October 1, 1960, 1961, and 1962. Thus, one publication, even though 1960-63 data are preliminary, makes available to economic and market researchers current data showing livestock-feed relationships at the national, regional, and state levels.

MAN, LAND, AND FOOD—LOOKING AHEAD AT WORLD FOOD NEEDS. Lester R. Brown, Regional Analysis Division. FAER-11.

Until recently man was able to augment the food supply largely by moving to unsettled areas and bringing new land into production. It has now become necessary to turn to an alternate method—raising yields. First, massive applications of capital will be needed—capital must be substituted for land. Second, this change implies drastic changes in technology, especially in the less developed regions. This report seeks to assess the magnitude and direction of the effort which must be made during the remaining four decades of this century if the projected population of 6 billion is to be sustained. (See October 1963 Farm INDEX.)

PRICES, MARKETING MARGINS, AND USES OF PEANUTS IN PEANUT BUTTER. Virginia M. Farnworth, Marketing Economics Division. MRR-624.

Peanut butter is the principal food product made from peanuts. In 1961-62, of the total 4.5 pounds per person of shelled peanuts used for food, 2.5 pounds were used in making peanut butter. Close to 65 per cent of the value of U.S. peanut butter sales is accounted for by sales through retail grocery stores. In 1960-61, consumers paid an average of 41.8 cents for a 12-ounce jar of peanut butter, the popular size.